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First results from the high current experiment

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Session RP1 - Poster Session VIII.

POSTER session, Thursday afternoon, November 14

Grand Ballroom CDE, Rosen Centre Hotel

[RP1.064] First Results From The High Current Experiment

P.A. Seidl (Lawrence Berkeley National Laboratory), D. Baca, F.M. Bieniosek, C.M. Celata, A. Faltens, L. Prost (LBNL), A. Friedman (Lawrence Livermore National Laboratory), S.M. Lund, A.W. Molvik (LLNL), W.W. Waldron (LBNL), Heavy Ion Fusion Virtual National Laboratory Collaboration



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Abstract Submitted
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The American Physical Society

Sorting Category: 2.1.1

First Results From The High Current Experiment¹ P.A. SEIDL, Lawrence Berkeley National Laboratory, D. BACA, LBNL, F.M. BIENIOSEK, LBNL, C.M. CELATA, LBNL, A. FALTENS, LBNL, L. PROST, LBNL, A. FRIEDMAN, Lawrence Livermore National Laboratory, S.M. LUND, LLNL, A.W. MOLVIK, LLNL, W.W. WALDRON, LBNL The High Current Experiment (HCX) is being assembled at LBNL as part of the US program to explore heavy-ion beam transport at a scale representative of the low-energy end of an induction linac driver for fusion energy production. The primary mission of this experiment is to investigate aperture fill factors (F) acceptable for the transport of space-charge dominated heavy-ion beams at high space-charge intensity (line-charge density 0.2 microC/m) over long pulse durations (τ 4 microsec). We present the phase space evolution of a well-matched K⁺ ion beam transported ($F_i 0.5$) through the first 10 electrostatic transport quadrupoles and 4 magnetic quadrupoles, including data from newly developed diagnostics. Later phases of the experiment will include more electrostatic lattice periods to allow more sensitive tests of emittance growth, and more measurements in magnetic quadrupoles to explore electron cloud issues on a driver scale.

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Prefer Oral Session
 Prefer Poster Session

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Special instructions: Please place this poster next to Celata et al.

and close to Bieniosek et al., and Molvik et al.

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